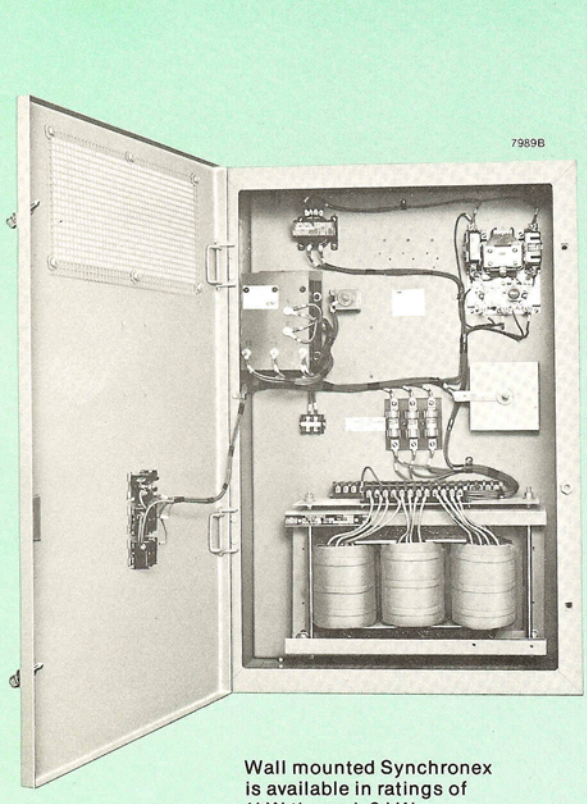
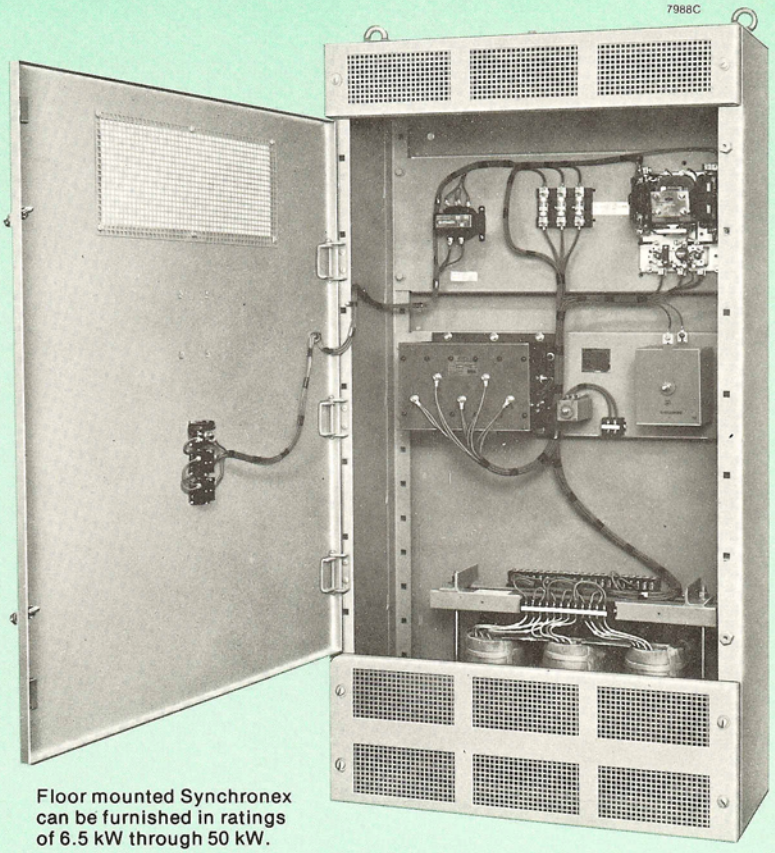
SYNCHRONEX®
STATIC EXCITER FOR SYNCHRONOUS MOTORS

AC-DC POWER CONVERSION FOR SYNCHRONOUS MOTOR EXCITATION;
AC INPUT: 230 OR 460 VOLTS, 3-PHASE, 60 HERTZ;
KW RANGE: 1-25 KW AT 125 VOLTS DC; 1-50 KW AT 250 VOLTS DC



Wall mounted Synchronex is available in ratings of 1kW through 9 kW.



Floor mounted Synchronex can be furnished in ratings of 6.5 kW through 50 kW.

SYNCHRONEX*: RELIABLE, COMPACT, QUIET DC EXCITATION

E-M Synchronex ac-dc silicon rectifier is a modern power supply for field excitation of synchronous motors. It uses highest quality, long-life silicon junction diodes which allow current to flow in only one direction thus allowing rectification. The diodes are arranged in a 3-phase bridge connection assembly. Convection cooling is used.

Replaces motor-generator set or the rotating dc exciter for synchronous motor field excitation. Protection against surge voltage from the motor field is provided by a suppression circuit across the rectifier bridge. Both ac and dc surge suppression is afforded by selenium devices engineered especially for synchronous motor applications.

*Synchronex is a registered trade name of Electric Machinery Mfg. Company.

- **SYNCHRONEX STATIC EXCITERS** have E-M type UC enclosures, an all welded reinforced steel system using standard dimension increments. It permits other components to be added later.
- **MINIMUM MAINTENANCE.** There are no brushes, commutator, or bearings to maintain — rectification is completely static.
- **QUIET OPERATION.** All units are convection cooled.
- **SAVES SPACE.** Available for wall mounting or floor mounting. It can be coordinated and mounted in the synchronous motor control enclosure.
- **HIGH EFFICIENCY.** Overall permanent efficiency of 92% to 95%.
- **RELIABLE.** All ratings meet or exceed applicable NEMA Standards.
- **EASILY INSTALLED.** Self-contained construction; requires only three ac input connections and two dc output connections.

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EMICC

VOLTAGE ADJUSTMENT

Transformer taps provide for adjusting the rectifier output voltage in a minimum of seven 4% steps over a range of voltage from 72% to 100% of rated dc voltage.

PERFORMANCE CHARACTERISTICS

Ripple — 4.5% RMS; Power Factor at rated load — 95%; Efficiency at rated load — 92% to 95%; Overload Capacity — 150% rated dc amperes for one minute; Regulation — 5% no load to full load.

MOUNTINGS

Ratings 4.5 kW and smaller are supplied for wall mounting. Ratings of 6.5 kW through 9 kW are suitable for floor or wall mounting. Larger units are floor mounted only.

DC OUTPUT RANGE

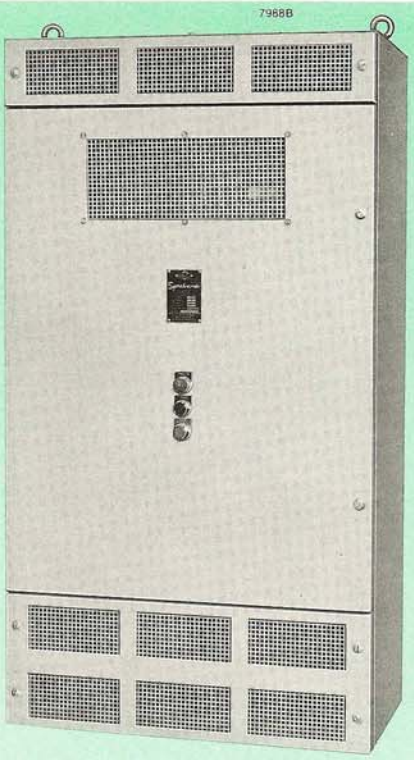
90-125 volts or 180-250 volts.

RATINGS

1, 2, 3, 4.5, 6.5, 9, 13, 17, 21 and 25 kW at 125 or 250 volts dc; 33, 40 and 50 kW at 250 volts dc. Ratings are designed for 3-phase, 60 Hertz service, and for 100% load current continuously; 150% current for 60 seconds.

WHEN ORDERING SPECIFY:

Ac voltage, phase, and frequency input; kW rating; dc voltage output; options desired; any special application requirements.



Floor mounted Synchronex with UC enclosure, a modular, functional Unitized Construction featuring standard mounting brackets.

Specifications:

The following components are mounted and wired in a convection-ventilated NEMA I enclosure. Enclosure may be omitted and unit made available for mounting in synchronous motor control enclosure.

1—Ac, three-pole, magnetic line contactor with suitable overload protection.

1—Transformer, three-phase, dry, two-winding isolated type.

1—Three-phase, full-wave, bridge-connected silicon rectifier assembly.

1—Set voltage surge suppressors, ac.

1—Set voltage surge suppressors, dc.

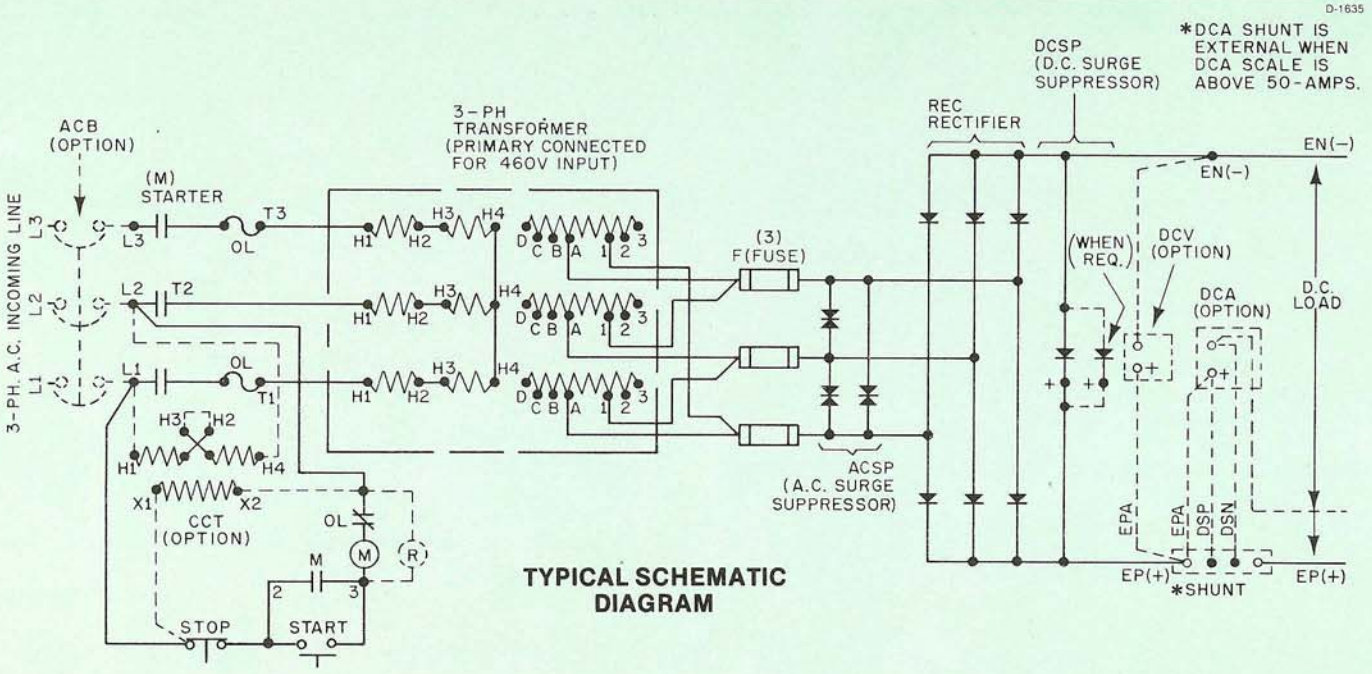
1—Set special current-limiting, high-speed fuses in transformer secondary for diode protection in the event of short circuit in dc circuit.

2—Terminals for dc connections.

1—Start-stop button, mounted on enclosure door.

THESE STANDARD OPTIONS ARE AVAILABLE:

Control transformer, 115 volt start-stop control circuit, indicating light, dc ammeter, dc voltmeter, primary molded-case circuit breaker, special voltage can also be supplied.



TYPICAL SCHEMATIC DIAGRAM

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